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WEARING IMAGES

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IMÁGENES PORTADAS

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THE FLOWERING FOOT OF FLORA. DETAIL OF SANDRO BOTTICELLI, *PRIMAVERA*, LATE 1470S OR EARLY 1480S, TEMPERA ON PANEL, 202 X 314 CM, GALLERIA DEGLI UFFIZI, FLORENCE.

BODIES OF KNOWLEDGE: RENAISSANCE ARMOR AND THE ENGINEERING OF MIND

CUERPOS DEL CONOCIMIENTO: ARMADURAS DEL RENACIMIENTO Y LA INGENIERÍA DE LA MENTE

Felix Jäger¹

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Abstract

This essay charts the role of armor in Renaissance practices of knowledge. Since the advent of gunpowder warfare, armor was largely unfit for combat, yet still became a centerpiece of princely representation and was prominently displayed in early collection spaces. Rather than illustrating chivalric virtues or antiquarian taste, such suits in my reading signal a shift towards a physiological fashioning of learning. Through juxtaposing two key sets of armor – one ‘gothic’ suit situated in the *studiolo*, the other a ‘grotesque’ garniture for a chamber of curiosities –, my paper traces how these embodied settings conflated epistemological with political sensibilities. While the earlier ensemble acted as a mnemonic ‘prosthesis’ that enhanced the mind of the wearer, the latter evoked natural history imagery to remap the order of things around personal authority. Objects of armor thus spotlight the interplay of material and political culture in engineering the early modern subject.

Keywords

Armor; body politics; mnemonics; prosthesis; *studiolo*; natural history; chamber of curiosities; automata.

Resumen

El presente ensayo trata sobre el papel de las armaduras en las prácticas renacentistas del conocimiento. Desde la aparición de las armas de pólvora, las armaduras dejaron de ser apropiadas para el combate, pero siguieron constituyendo una de las piezas centrales en las representaciones principescas y fueron ampliamente expuestas en espacios de colección. En lugar de ilustrar las virtudes caballerescas o los gustos por las antigüedades, estas vestimentas señalan, a mi entender, un giro hacia una concepción fisiológica del conocimiento. A través de la yuxtaposición de dos tipos clave de armaduras –uno como vestimenta «gótica» emplazada en el *studiolo* (taller

1. Associate of the Research Group «Bilderfahrzeuge: Aby Warburg's Legacy and the Future of Iconology» at the Warburg Institute, London. Email: jaeger@bilderfahrzeuge.org

de arte), otro como decoración «grotesca» en los gabinetes de curiosidades– mi texto indaga sobre cómo estos elementos ajustados al cuerpo fusionaron las sensibilidades epistemológicas y políticas. Mientras que unas actuaban como «prótesis» mnemónicas que fortalecían la mente del quien las usaba, las otras evocaban la imaginería de la historia natural para replantear el orden de las cosas alrededor de la autoridad personal. De este modo, las armaduras enfocan la interacción entre la cultura material y la política en el desarrollo del sujeto moderno.

Palabras clave

Armadura; política corporal; prótesis; *studiolo* (taller de arte); historia natural; gabinete de curiosidades; automata.

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THE PORTRAIT OF FEDERICO DA MONTEFELTRO

(1422–1482) with his son Guidobaldo (1472–1508), painted around 1475 by either Pedro Berruguete (1450–1504) or Justus van Gent (ca. 1410–1480), depicts the famous *condottiere* of Urbino clad in a suit of plate armor while studying a silk-bound codex (Figure 1). Seated upright on an ornate throne in a private chamber, Federico is surrounded by symbols of power and military distinction: the collar of the Order of the Ermine, the insignia of the Order of the Garter, and a miter-shaped hat on the shelf signaling his investiture as duke by Pope Sixtus IV (1414–1484). On his right stands his four- or five-year-old heir, dressed in lavishly embroidered garments and equipped with a gilded scepter.² Federico's gleaming armor, which emerges from underneath a brocade mantle, accurately represents contemporary models, as demonstrated by a similar ensemble preserved as a votive offering in the Sanctuary of Santa Maria delle Grazie in Mantua (Figure 2). The fully-enclosed armet, the butterfly-shaped elbow-guards, and the poleyns with rounded wings point to Milanese production, possibly from the workshop of the Missaglia.³ Following Federico's biographer Vespasiano da Bisticci (1421–1498), the portrait of the duke and his son may have been created in close dialogue with the works outfitting the *studiolo* of the Palazzo Ducale in Urbino in the same period. Vespasiano credits a Flemish artist with having manufactured paintings for the series of 'men of letters' mounted in the upper part of the study, as well as a representation of the duke «which only wanted breath»,⁴



FIGURE 1. PEDRO BERRUGUETE OR / AND JUSTUS VAN GENT: PORTRAIT OF FEDERICO DA MONTEFELTRO WITH HIS SON GUIDOBALDO, OIL ON PANEL, CA. 1475, URBINO, GALLERIA NAZIONALE DELLE MARCHE, INV. N°. 1990 D 56.

2. For a discussion of the double-portrait, ROSENBERG, Charles: «The Double Portrait of Federico and Guidobaldo da Montefeltro: Power, Wisdom, and Dynasty», in CERBONI BAIARDI, Giorgio, CHITTOLETTI, Giorgio and FLORIANI, Piero (eds.): *Federico di Montefeltro: Lo Stato, le Arti, la Cultura*. Rome, Bulzoni, 1986, vol. 2, pp. 213–222; CHRISTIANSEN, Keith and WEPELMANN, Stefan (eds.): *The Renaissance Portrait from Donatello to Bellini*. Exhibition Catalogue. New Haven, Yale University Press, 2011, cat. no. 120, pp. 287–290. The book Federico is studying has been identified as Gregory the Great's *Moralia in Job* in SIMONETTA, Marcello (ed.): *Federico da Montefeltro and his Library*. Exhibition Catalogue. Milan, Y. Press, 2007, cat. no. 1, pp. 102–109, here: pp. 105–109.

3. For a detailed analysis of the Mantua armor and its context, BOCCIA, Lionello Giorgio: *Le Armature di S. Maria delle Grazie di Curtatone di Mantova e l'Armatura Lombarda del '400*. Busto Arsizio, Bramante, 1982, cat. no. B2, pp. 246–250; MANN, James: «The Sanctuary of the Madonna delle Grazie, with Notes on the Evolution of Italian Armour during the Fifteenth Century», *Archaeologia*, 80 (1930), pp. 117–142, here: p. 135; MANN, James: «A Further Account of the Armour Preserved in the Sanctuary of the Madonna delle Grazie near Mantua», *Archaeologia*, 87 (1938), pp. 311–351, here: pp. 313–315; p. 323; p. 328; POSIO, Vannozzo: *Le Armature delle Grazie tra Storia e Leggenda*. Modena, Mucchi, 1991, cat. no. B3, pp. 40–41. The same type of armor also features in an altarpiece by Piero della Francesca (ca. 1420–1492), in which the duke kneels in front of the Virgin, his helmet and gauntlets placed conspicuously on the ground before him: PIERO DELLA FRANCESCA: *The Virgin with Child, Angels, and Saints / so-called «Pala Montefeltro»*, tempera on panel, 1472–1474, Milan, Pinacoteca di Brera, inv. no. 180. For a reading of Federico's armor in the context of his activities for the church, ARONBERG LAVIN, Marilyn: «Piero della Francesca's Montefeltro Altarpiece: A Pledge of Fidelity», *The Art Bulletin*, 51 (1969), pp. 367–371.

4. DA BISTICCI, Vespasiano: *Renaissance Princes, Popes, and Prelates: «The Vespasiano Memoirs»: Lives of Illustrious Men of the XVth Century*. Trans. GEORGE, William and WATERS, Emily. New York, Evanston and London,



FIGURE 2. SUIT OF ARMOR FROM THE SANTUARIO DI SANTA MARIA DELLE GRAZIE DI CURTATONE, STEEL AND LEATHER, MILAN (?), CA. 1460–1480, MANTUA, MUSEO FRANCESCO GONZAGA, MOD. B2.

perhaps a reference to this very portrait of the duke with his son. Considered in this context, the intimate setting of the painting indeed alludes to that same room. On display in the study, the portrait would have been framed by the surrounding objects and books, while in turn commenting on the space's use.⁵

The lower portion of the *studiolo* is furnished with illusionistic intarsia of shelves and benches, latticework doors, animals, musical and scientific instruments, books, writing tools, as well as a full-scale set of armor seemingly deposited in a closet (Figure 3). Unlike in the double-portrait, the intarsia panels show the armor disposed, while Federico is instead depicted to the left draped in a toga. Due to this juxtaposition, the iconographic program of the *studiolo* is commonly interpreted as an illustration of the divide between the *vita activa* and the *vita contemplativa*, the one represented by armor, the other by antique robes, and both ambiguously embodied by the duke. In Vespasiano's words, «no other united as he did, in his person the soldier and the man of letters.»⁶ Hence, the *studiolo* delimits a space of learned reflection, distinct from the mundane world. With his armor abandoned, the duke takes up books and instruments; the former denotes physical fitness and political engagement, the latter introspection and ascetic confinement.⁷ The intarsia panels would thus indicate a renunciation of chivalric rule, as epitomized by armor, in favor of a humanist approach to politics based on erudition, representation, and cultural patronage.

This essay reviews these assumptions by instead examining the political molding of erudition through armor. Rather than excluding his suit from the study, the double-portrait depicts the duke reading by means of his armor, which supports his posture as if to enhance the effects of learning. From this perspective, the study's

Harper & Row, 1963, pp. 83–114, here: p. 101.

5. For a reconstruction of the *studiolo* that places the double-portrait among the *uomini illustri*, CLOUGH, Cecil H.: «Art as Power in the Decoration of the Study of an Italian Renaissance Prince: The Case of Federico da Montefeltro», *Artibus et Historiae*, 16 (1995), pp. 19–50, here: pp. 25–28.

6. DA BISTICCI, Vespasiano: *op. cit.*, p. 83.

7. ARASSE, Daniel: «Frédéric dans son Cabinet: Le Studiolo d'Urbino», in BONNEFOY, Yves (ed.): *Le Sujet dans le Tableau: Essais d'Iconographie Analytique*. Paris, Flammarion, 1997, pp. 17–30, here: pp. 24–25; CAMPBELL, Stephen: *The Cabinet of Eros: Renaissance Mythological Painting and the Studioli of Isabella d'Este*. New Haven, Yale University Press, 2004, pp. 42–45; KIRKBRIDE, Robert: *Architecture and Memory: The Renaissance Studioli of Federico da Montefeltro*. New York, Columbia University Press, 2008, pp. 15–16; p. 30; pp. 111–114. Similarly, for the characterization of *vita activa* and *vita contemplativa*, CLOUGH, Cecil H: *op. cit.*, p. 30. For the general intellectual context, KRISTELLER, Paul Oskar: «The Active and the Contemplative Life in Renaissance Humanism», in VICKERS, Brian (ed.): *Arbeit, Muße, Meditation: Betrachtungen zur «Vita Activa» und «Vita Contemplativa»*. Zürich, Verlag der Fachvereine, 1985, pp. 133–152.



FIGURE 3. GIULIANO DA MAIANO (?): SUIT OF ARMOR, INLAID WOOD INTARSIA, 1474–1476, URBINO, PALAZZO DUCALE, STUDIOLO OF FEDERICO DA MONTEFELTRO.

intarsia armor does not signal renunciation, but calls for use, just as the allegedly more humanist objects rendered in the intarsia do. My paper probes such visual cues by tracing armor within contemporary discourses on memory and cognition. I explore the role of these objects in early collection spaces like the *studiolo*, but also chambers of curiosities, in which they were prominently showcased alongside other items of knowledge. Iconographic affinities between the decorations on armor, mnemonic devices, and natural history illustrations suggest a remapping of the order of things on account of embodied dispositions and personalized

power. In my interpretation, armor shared in generating, shaping, and organizing knowledge through the evocation of political authority. Shut away in his suit, the ruler, however, withdraws from visual inquiry. He governs from within the laws of nature but is himself exempt from them. Such displacements between power and knowledge through armor thus promise to shed a different light on the interplay of material and political culture in the Renaissance as well as on the prehistory of early modern collections.

FORTIFYING THOUGHT

In his biography, Vespasiano attributes the political acumen of the duke of Urbino to a novel blend of intellectual and physical training underpinned by exceptional memory. Federico is said to have been the first *condottiere* to master philosophy by imitating ancient and modern examples, one by way of historical study, and the other «through nurture of warlike practice from early infancy.»⁸ From a young age, he was able to name «all the regions of the earth»⁹ as well as the people and places mentioned in the Bible. The duke's son Guidobaldo, who poses next to him in the *studio* portrait, was believed to have inherited his father's mnemonic skill. His reputation was such that even in the seventeenth century the German writer and mystic Quirinus Kuhlmann (1651–1689) credited him with superhuman memory of «everything that has ever happened,»¹⁰ which Kuhlmann considered crucial to the art of government. Conceptually, Vespasiano's appraisal of memory draws on Federico's humanist self-fashioning, which stressed in particular his exercise of *magnificentia*, the crowning virtue of Plato's philosopher-king. Cultivated through education and experience, the term originally signaled due measure, good taste, and honor sustained by excellent memory.¹¹ In the Renaissance, *magnificentia* signified all the traits that benefited civic culture, but was also used to characterize the aesthetic qualities of buildings and works of art. Later, it informed strategies of princely representation, which increasingly shifted the emphasis from ethical values to social prestige and decorous display, as seen in the writings of Leon Battista Alberti (1404–1472), Timoteo Maffei (1415–1470), and Niccolò Machiavelli (1469–1527). Against this background, scholars commonly argue that the Palazzo Ducale in Urbino was designed to convey Federico's claim to *magnificentia*, with

8. DA BISTICCI, Vespasiano: *op. cit.*, p. 99.

9. *Idem*, p. 100.

10. Trans. FJ / KUHLMANN, Quirinus: *Lehrreicher Geschicht=Herold*. Breslau, Johann Meyer, 1673, cap. 3, pp. 123–125, here: pp. 123–124: «Guidus Ubaldus ein Hertzog von Urbino / ward mit einer so Goettlichen Faehigkeit begluekseeliget / di ganz unerhoerte Wirkung erwisen. [...] In der aedlen Geschicht=kunst drang er so weit / daß er alles / was imals geschehen / in seinem Sinne beschloß.» For the context of princely education, TRANINGER, Anita: «Domänen des Gedächtnisses: Das Scheitern der Mnemotechnik an der *memoria* des Absoluten Herrschers», in BERNS, Jörg Jochen and NEUBER, Wolfgang (eds.): *Seelenmaschinen: Gattungstraditionen, Funktionen und Leistungsgrenzen der Mnemotechniken vom Späten Mittelalter bis zum Beginn der Moderne*. Vienna, Cologne and Weimar, Böhlau, 2000, pp. 37–51.

11. PLATO: *The Republic*. Trans. GRIFFITH, Tom. Ed. FERRARI, G. R. F. Cambridge, Cambridge University Press, 2000, 487 a–e, pp. 190–191.

the *studiolo* staging his commitment to humanist virtues and the patronage of the arts.¹² However, such attention to outward appearance fails to account for the more intimate dimension of these spaces that fostered domestic practices rather than representation. For example, as a correlative to *magnificentia*, the notion of *splendore* denotes a private crafting of the home by means of accessory objects. In his survey of the term, Giovanni Pontano (1426–1503) traces the extension of the body into its environment, from hygienic treatment (*cultus*), clothes, and adornment (*ornatus*) to interior decoration, collections, and festivities (*apparatus*).¹³ In this light, the intarsia suit of armor featured in the *studiolo* does not so much call for contemplation, but serves as a personal key to the surrounding space, which by analogy adds further layers to the duke's outfitting.

Armor may well have been suggestive of a corporeal conception of architecture that evokes embodiment and use rather than a canon of ideal human proportions. Just like building constructions, armor is composed of inert parts, obeys tectonic principles, and provides protection. The tactility of armor renders the experience of confined space much more palpable than do technical drawings, which privilege visual apprehension. Indeed, armor may have inspired the architectural thought of Francesco di Giorgio Martini (1439–1501), who contributed to the design of the Palazzo Ducale and built numerous fortifications for the duke as a military engineer.¹⁴ In his treatise *Trattato di Architettura, Ingegneria e Arte Militare* (1482), Francesco famously devised a physiological model for the planning of cities, accompanied by a drawing of a male nude overlaid with urban landmarks (Figure 4). His body is encircled by a double line indicating city walls as he raises both arms to balance a towering fortress as a helmet over his head. Since, as Francesco argues, the face is the most noble, but also most vulnerable part of the body, fortresses need to be placed in elevated positions so that «the entire body of the city may judge and see.»¹⁵ The head of the ruler is the seat of wisdom and government; therefore, his

12. On the curation of *magnificentia* in Urbino, CHELES, Luciano: *The Studiolo of Urbino: An Iconographic Investigation*. Wiesbaden, Ludwig Reichert, 1986, p. 12; p. 23; CLOUGH, Cecil H.: «Federigo da Montefeltro's Patronage of the Arts, 1468–1482», *Journal of the Warburg and Courtauld Institutes*, 36 (1973), pp. 129–144, here: pp. 139–142; KIRKBRIDE, Robert: *op. cit.*, p. 25. On the art historical context, A. D. FRASER JENKINS, Anthony David: «Cosimo de' Medici's Patronage of Architecture and the Theory of Magnificence», *Journal of the Warburg and Courtauld Institutes*, 33 (1970), pp. 162–170. On the intellectual history and moral connotations of the term in general, GAUTHIER, René Antonin: *Magninimité: L'Idéal de la Grandeur dans la Philosophie Pâienne et dans la Théologie Chrétienne*. Paris, J. Vrin, 1951.

13. PONTANO, Giovanni: «De Splendore» / «La Virtù dello Splendore», in TATEO, Francesco (ed. and trans.): *I Libri delle Virtù Sociali*. Rome, Bulzoni, 1999, pp. 222–243, esp. p. 225. On the political fashioning of home, WEBB, Jennifer: «'All that is Seen': Ritual and Splendor at the Montefeltro Court in Urbino», in CAMPBELL, Erin J., MILLER, Stephanie R. and CONSAVARI, Elizabeth Carroll (eds.): *The Early Modern Italian Domestic Interior, 1400–1700: Objects, Spaces, Domesticities*. Farnham, Ashgate, 2013, pp. 191–204.

14. For aesthetic affinities between Francesco's fortresses and contemporary armor, BARTH, Fritz: *Zeichen des Wehrhaften: Festungsbauten von Francesco di Giorgio Martini*. Stuttgart and London, Axel Menges, 2011, pp. 41–42.

15. Trans. FJ / DI GIORGIO MARTINI, Francesco: *Trattati di Architettura, Ingegneria e Arte Militare*. Ed. MALTESE, Corrado. Milan, Il Polifilo, 1967, vol. 1, p. 3: «Così la natura avendo mostro a loro el capo e faccia del corpo umano essere el più nobile membro d'esso, e che cogli occhi visivi tutto el corpo giudicar debba, così la fortezza di a essere posta in luogo eminente che tutto el corpo della città giudicare e vedere possa.»

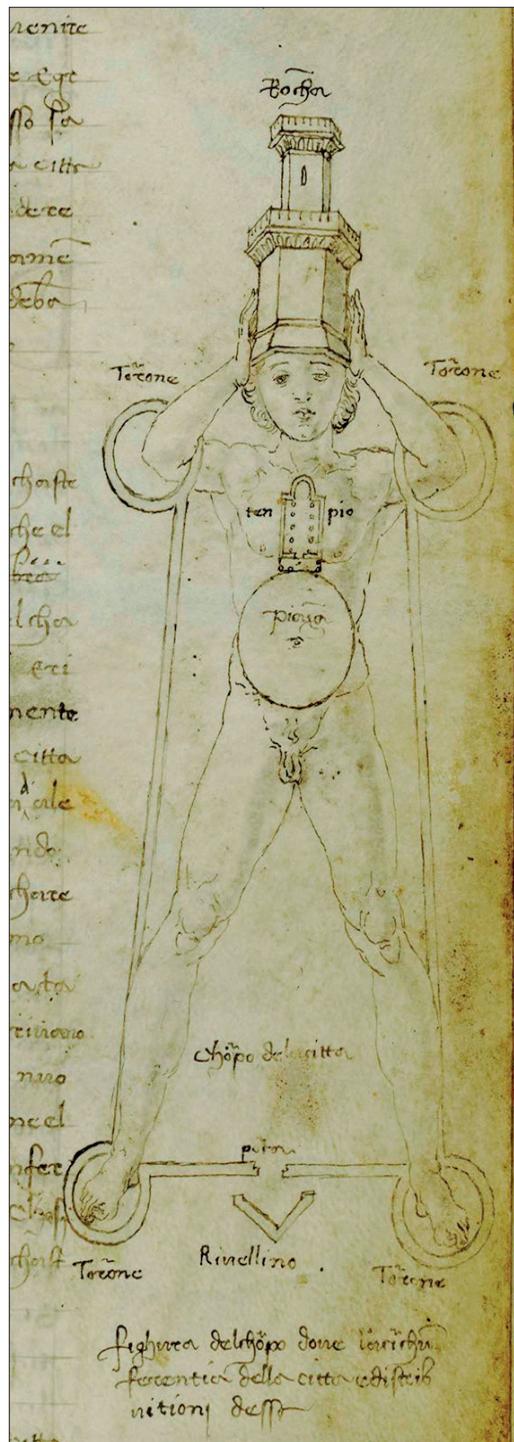


FIGURE 4. FRANCESCO DI GIORGIO MARTINI: FORTIFIED MAN, DRAWING, 1478–1486, TURIN, BIBLIOTECA REALE, CODEX SALUZZIANUS 148, FOL. 3R.



FIGURE 5. FRANCESCO DI GIORGIO MARTINI: HELMETS AND SHIELDS, DRAWING, 1478–1486, TURIN, BIBLIOTECA REALE, CODEX SALUZZIANUS 148, FOL. 96V.

person embodies the fortress. As Erasmus of Rotterdam (1466–1536) asserts, the ruler occupies the tower of the city just as reason is located in the brain.¹⁶

In the same manuscript, Francesco also drafted designs of helmets and shields, which are believed to have served as models for ornamental decorations and trophies (Figure 5).¹⁷ However, as instruments of cognition, these sketches would have inspired his architectural projects. They provided figures of thought which aided in the design of spaces that both protected and stimulated the mind of the ruler. The interplay between armor and architecture is substantiated in the double-portrait by the helmet on the ground, which reflects the columns in the courtyard of the Palazzo Ducale.¹⁸ The helmet thus situates the *studiolo* within its architectural setting, while at the same time emerging as the material manifestation of the duke's mind. The detail highlights the conceptual stakes of these objects, which held a prominent place in the intellectual culture of Urbino. Federico is reported to have been personally involved in the planning of his architectural enterprises and may have seen his residence reproducing his own armored image in built terms.¹⁹ He collected texts on the art of war and was fascinated by the military dress of antiquity, as Enea Silvio Piccolomini (1405–1464) recounts.²⁰ For this reason, the Signoria of Florence commissioned Antonio Pollaiuolo (1431–1498) to manufacture a helmet *all'antica* to present to the duke as a gift.²¹ Francesco di Giorgio Martini himself is speculated to have owned a sallet in the shape of a lion's head, which imitated antique archetypes.²² In this context, objects of armor point to an alternative avenue for the reinvention of antiquity, based on military power and physical performance rather than learned imitation. They evoke princely splendor by installing the ruler's body into his architectural apparatus.

16. In his seminal treatise, *Enchiridion Miles Christiani* (1503), Erasmus casts the *miles Christi* as a political figure, whose «armor of God» vouches for his moral integrity: ERASMUS OF ROTTERDAM: *The Manual of the Christian Knight*. London, Morrison & Gibb, 1905, pp. 81–88. For the political casting of the body metaphor in the Renaissance generally, ARCHAMBAULT, Paul: «The Analogy of the 'Body' in Renaissance Political Literature», *Bibliothèque d'Humanisme et Renaissance*, 29 (1967), pp. 21–53.

17. DI GIORGIO MARTINI, Francesco: *op. cit.*, Vol. 1, p. 288, fol. 96v, tav. 178; fol. 97r, tav. 179. For the conceptual underpinnings of ornament in Francesco di Giorgio, CIERI VIA, Claudia: «Disegno e Ornamento nell'Opera Pittorica di Francesco di Giorgio Martini», in FIORE, Francesco Paolo (ed.): *Francesco di Giorgio alla Corte di Federico da Montefeltro*. Florence, Olschki, 2004, vol. 1, pp. 229–247.

18. For a detailed analysis, SIMONETTA, Marcello: *op. cit.*, cat. no. 1, pp. 104–105.

19. For Federico's architectural ambitions, DA BISTICCI, Vespasiano: *op. cit.*, p. 100. For the *studiolo* as virtual 'self-portrait', ARASSE, Daniel: *op. cit.*, pp. 29–30.

20. PICCOLOMINI, Enea Silvio: «Commentarii Rerum Memorabilium» / «Il Libro dei Ricordi», in GARIN, Eugenio (ed.): *Prosatori Latini del Quattrocento*. Milan and Naples, Ricciardi, 1952, pp. 663–687, here: cap. 2, pp. 674–677. For military scholarship in Urbino, SCALINI, Mario (ed.): *Armi e Potere nell'Europa del Rinascimento*. Exhibition Catalogue. Milan, Silvana, 2018, pp. 289–290.

21. PYHRR, Stuart W. and GODOY, José-A. (eds.): *Heroic Armor of the Italian Renaissance: Filippo Negroli and his Contemporaries*. Exhibition Catalogue. New York, Abrams, 1998, cat. no. 8, p. 94.

22. Sallet in the Shape of a Lion's Head, steel, copper, gold, glass, pigment, and textile, ca. 1475–1480, New York, Metropolitan Museum of Art, acc. no. 23.141: SCALINI, Mario: «La Celata di Borghese Borghesi ed altri Copricapi Onorifici del Quattrocento», *OPD Restauro*, 5 (1993), pp. 137–141, here: pp. 138–139.

PROSTHETIC MEMORY

Such a technological notion of the *studiolo* modeled on armor sheds a different light on how it framed the acquisition, management, and use of knowledge. Instead of expressing erudition and virtue through visual symbols, it acts as a means to furnish the duke with these qualities. The *studiolo* not only appeals to the iconographic literacy and courtly tastes associated with a humanist agenda, but it implements that agenda by crafting embodied dispositions and perceptive susceptibilities. The exceptional mnemonic skills of the duke, which promote his *magnificentia*, rest upon the physical habitus he adopts when wearing armor. The picture of Federico in armor reading in his *studiolo* is therefore less concerned with the representation of authority or the ‘memorialization’ of his reign than with the physiology of learning.²³ In other words, the portrait provides a visual instruction on how to tool armor for educational purposes, which is further underscored by the presence of the young prince. Likewise, the illusionistic intarsia suit of armor should be understood as recommending rather than rejecting its use.

Humanist ‘mirrors of princes’ and educational treatises explored new ways of enhancing the mind through treatment of the body. Predicated on the principle of *mens sana in corpore sano*, popular pedagogical treatises, such as by Pietro Paolo Vergerio (1370–1444/1445), Jakob Wimpfeling (1450–1528), and Juan Luis Vives (1493–1540), elaborated techniques of the body that would boost learning by means of physical exercise, disciplinary control, and behavioral design. In his treatise *De Liberorum Educatione* (1450), Enea Silvio Piccolomini argued for rectitude, regularity, and proportion in appearance and moderation in movement. He admonished his students to take care «that your expression is regular, [...] don’t throw your head back or keep your eyes on the ground; don’t bend your neck to either side; don’t spread your hands. [...] The motions of your eyelids must be properly restrained; your arms should be straight, your gait firm.»²⁴ Clothing is considered crucial to shaping a docile disposition; one should avoid soft linen and instead wear coarse materials that «make the limbs tougher and more able to endure labor.»²⁵

This regimen of self was believed to encourage moral steadfastness, but also to augment cognitive abilities. The faculty of memory, in particular, was thought to benefit from a physical posture that accommodates the anatomy of the brain. The physician and scholar Jacobus Publicius (d. 1472), who taught at various universities, combined rhetorical strategies with medical remedies to enhance mnemonic

23. For the ‘haunting’ of armor as memorial relic of its owner, JONES, Ann Rosalin and STALLYBRASS, Peter: *Renaissance Clothing and the Materials of Memory*. Cambridge, Cambridge University Press, 2000, pp. 250–251.

24. PICCOLOMINI, Enea Silvio: «*De Liberorum Educatione*» / «*The Education of Boys*», in KALLENDORF, Craig W. (ed. and trans.): *Humanist Educational Treatises*. Cambridge and London, Harvard University Press, 2002, pp. 126–259, here: cap. 12, pp. 139–141.

25. *Idem*, p. 39. For the principle of *decorum*, *idem*, cap. 11–12, pp. 138–141. For the cosmetic fashioning of princes and the invention of plastic surgery, FINUCCI, Valeria: *The Prince’s Body: Vincenzo Gonzaga and Renaissance Medicine*. Cambridge and London, Harvard University Press, 2015, pp. 64–73. Generally, on the interplay of body and soul in humanist education, MUSOLFF, Hans-Ulrich: *Erziehung und Bildung in der Renaissance: Von Vergerio bis Montaigne*. Vienna, Cologne and Weimar, Böhlau, 1997, pp. 69–85.

performance. In the second edition of his *Ars Memorativa* (1485), Publicius discusses the tripartite makeup of the brain mapped out by Hippocrates (ca. 460–370 BC).²⁶ To recover memories, he writes, the psychical pneuma flows from the anterior ventricle, which designates the locale of cognition, to the posterior ventricle, which stores memories, by way of the pineal gland, which regulates the passage of the pneuma. In order to circulate, the gland must be open, which is facilitated by an erect carriage and a stretched neck. The setting of the *scriptorium*, for example, accounted for these physiological conditions of learning, where small spaces with tight furnishings forced the user into an upright, seated posture, much like Federico in his *studio* portrait.²⁷ Even beyond spatial fitting, however, his suit of armor ‘imprints’ such a disposition upon his body orthopedically. The tectonics and materiality of armor rectified the body, locked the head into position, and subdued movement. In fact, some features of the depicted suit are presumed to have relieved the effects of the duke’s thoracic hyperkyphosis, which according to contemporary anatomical theory would have prevented memorization altogether.²⁸ The duke’s armor thus acts as a mnemonic prosthesis that allowed him to access and process the *studio*’s epistemic resources.²⁹

Seen from another perspective, armor may have assisted recollection by creating a microenvironment that provides ideal climatic conditions for the wearer and wards off sensory distractions. In line with contemporary humoralism, Publicius also devised a set of physical exercises and dietary precepts intended to keep the psychical pneuma lucid. To avoid extreme temperatures, the body should be «wrapped not far from the fire» or kept in «closed rooms shut off from air and wind.»³⁰ Similar to Piccolomini’s instructions, Publicius encourages some mechanical stimulation of the head «with an ivory comb and a rough, coarse rag»³¹ in order to arouse the spirits of the mind. Just as the *studio* delimits a space of withdrawal from the outside world, so too does armor distance the wearer from affective perturbations, while preparing the senses for the reception of knowledge.³² These suits do not simply clear the mind for ascetic meditation but cast the body of the wearer in a position that attunes

26. PUBLICIUS, Jacobus: «The Art of Memory», trans. BAYERLE, Henry, in CARRUTHERS, Mary and ZIOLKOWSKI, Jan M. (eds.): *The Medieval Craft of Memory: An Anthology of Texts and Pictures*. Philadelphia, University of Pennsylvania Press, 2002, pp. 226–254, here: pp. 233–234; pp. 246–247.

27. For a historical overview of study furniture, BOHR, Michael: *Die Entwicklung der Kabinettsschränke in Florenz*. Frankfurt a. M., Peter Lang, 1993, pp. 83–89; RICCARDI-CUBITT, Monique: *The Art of the Cabinet*. London, Thames and Hudson, 1992, pp. 22–35; pp. 39–42.

28. D’ANTONI, Anthony and TERZULLI, Stephanie: «Federico di Montefeltro’s Hyperkyphosis: A Visual-Historical Case Report», *Journal of Medical Case Reports*, 2 (2008), p. 11. For current orthopedic treatments reminiscent of armor, such as taping, bracing, and spinal orthoses, BETTANY-SALTIKOV, Josette et al.: «Management of Spinal Deformities and Evidence of Treatment Effectiveness», *The Open Orthopaedics Journal*, 11 (2017), pp. 1521–1547, here: pp. 1533–1534; pp. 1537–1538.

29. For the anatomy of memory, BOLZONI, Lina: *La Stanza della Memoria: Modelli Letterari e Iconografici nell’Età della Stampa*. Turin, Einaudi, 1995, pp. 135–143; CARRUTHERS, Mary: *The Book of Memory: A Study of Memory in Medieval Culture*. 2nd edition. Cambridge, Cambridge University Press, 2008, pp. 60–68; KIRKBRIDE, Robert: *op. cit.*, pp. 62–63; pp. 190–192. On contemporary notions of embodied cognition and the *corpus animatum*, KLEMM, Tanja: *Bildphysiologie: Wahrnehmung und Körper in Mittelalter und Renaissance*. Berlin, Akademie-Verlag, 2013, pp. 165–207.

30. PUBLICIUS, Jacobus: *op. cit.*, p. 248.

31. *Ibidem*.

32. On the ascetic framing of the *studio* and the rationale of sensory deprivation, CAMPBELL, Stephen: *op. cit.*, pp. 36–37.

him to the surrounding objects. His armor 'extends' the mind of the duke into his collection and drives his apprehension. In this sense, the *studiolo*-portrait operates as another perceptual prosthesis that adjusts Federico's vision to embodied cognition. His armored likeness would challenge Federico to live up to his own idealized learning by donning that very same suit. In this interpretation, the painting instructs the beholder on the use of armor even as it reveals the physical disposition that will allow him to absorb its sensorial information.³³ In other words, the portrait not only symbolizes a disciplinary attitude, but it fabricates such an attitude physiologically.

MNEMONIC POWER

While armor enhanced the learning abilities of the wearer, it also framed his perception and informed the meaning of seen objects. The *studiolo* allocated Federico's place in the universe of things, while his own presence occupied the collection and mapped out another sense of order, based not on topographical coordinates but the functions of the body. Such a physiological fashioning of knowledge is suggested by the popularity of armor, which played a key role in the transformation of Renaissance studies into early modern collection spaces. Objects of armor acted as a material apparatus for assigning epistemic content to the physique of the wearer. Rather than just managing information, however, such corporeal models linked knowledge to political values and furnished new means of exercising power.

Though noted for the inaccessibility of its iconographic program, the spatial arrangement of objects in the *studiolo* of Urbino is often thought to comply with a topographical mnemonic that assigns information to locations (*loci*) within imaginary environments, later retrieved by 'journeying' through these environments.³⁴ Originally, this mnemonic method assisted the memorization of speeches, such as outlined in the pseudo-Ciceronian oratorical manual *Rhetorica ad Herennium* (80–70 BC), which was widely studied in the Renaissance. Publicius confirmed that the disposition and measure of things stored in memory hold «so much importance and force that without them, all things [...] lie concealed in obscurity.»³⁵ Much as in painting, the compositional and aesthetic qualities of places, as determined by light, intervals, and variety, condition the efficacy of recollection.³⁶

Other mnemonic techniques advocated a more embodied approach to memory. The Catalan Francisan Francesc Eiximenis (ca. 1327–1409), for example, in his

33. For these 'schematic' effects on the beholder, BREDEKAMP, Horst: *Image Acts: A Systematic Approach to Visual Agency*. Ed. and trans. CLEGG, Elizabeth. Berlin and Boston, De Gruyter, 2018, pp. 22–23; pp. 77–78.

34. KIRKBRIDE, Robert: *op. cit.*, pp. 41–47; pp. 66–74. For the mnemonic infrastructure of early modern collections, BOLZONI, Lina: *op. cit.*, pp. 245–270. For a comprehensive treatment of the topographical and architectural design of memory, CARRUTHERS, Mary: *op. cit.*, pp. 89–98; YATES, Frances: *The Art of Memory = Selected Works*, vol. 3. London and New York, Routledge, 1966, pp. 1–26; *idem*: «Architecture and the Art of Memory», *Architectural Association Quarterly*, 12 (1980), pp. 4–13. For a discussion in light of current neurological research, WORTHEN, James B. and HUNT, R. Reed: *Mnemonology: Mnemonics for the 21st Century*. New York, Psychology Press, 2010, pp. 55–59.

35. PUBLICIUS, Jacobus: *op. cit.*, p. 234.

36. *Idem*, pp. 236–238. Likewise, [CICERO:] *Rhetorica ad Herennium*. Trans. CAPLAN, Harry. Cambridge and London, Harvard University Press, 1954, lib. III, cap. 19, pp. 210–213.

preaching handbook *Ars Praedicandi Populo* (before 1379) proposed making use of the human body, which would not only allow for localization, but also relate items among each other in terms of dependencies or hierarchies. Matters that pertain to the community are therefore considered particularly suitable for corporeal mnemonics. In line with the metaphor of the state as body, Eiximenis envisions political order in the human organism, with the feet signifying peasants, the arms knights, «the head the king, because he is the head and principal part of the republic.»³⁷ In this context, Francesco di Giorgio Martini may have drawn as much on such mnemonic devices in rendering his fortified man (Figure 4) as on more material models of suits of armor. In fact, armor would have appealed to memory imprints in the beholder by objectifying the body of the wearer and labelling it with inscriptions, heraldic insignia, and abstract allegories.³⁸ The composite construction of these suits insinuates a dismantling into discrete components reminiscent of the reduction and recombination of complex information in cognition.³⁹ They also invested the wearer with his own epistemic double. The ‘declarative’ content of memory in this way merges with the ‘procedural’ routines of physical performance, such as implied by the disciplinary agenda of contemporary education.⁴⁰ The armored ruler is thus transformed into a body of knowledge, whose every move reconfigures the order of things. Through mnemonic incorporation, his expressions are recast into statements of facts, his gestures of command into an imperative to know.

The schema of the body serves as a vehicle for mental images, which are clustered around individual members, organs, and physiognomic features. These images, in turn, reference more complex content by means of association (*similitudo*). In order to easily imprint themselves into the mind, as the *Rhetorica ad Herennium* advised, they should be conceived in such a way that they arrest the attention of the inner eye. To this end, they ought to exceed mimetic representations and excite the senses with impressions that are «exceptionally base, dishonorable, extraordinary, great,

37. EIXIMENIS, Francesc: «On Two Kinds of Order that Aid Understanding and Memory», trans. RIVERS, Kimberly, in CARRUTHERS, Mary and ZIOLKOWSKI, Jan M. (eds.): *The Medieval Craft of Memory: An Anthology of Texts and Pictures*. Philadelphia, University of Pennsylvania Press, 2002, pp. 189–204, here: pp. 201–202. For a contextualization, RIVERS, Kimberly: «Memory and Medieval Preaching: Mnemonic Advice in the *Ars Praedicandi* of Francesc Eiximenis (ca. 1327–1409)», *Viator*, 30 (1999), pp. 253–284. On the use of anthropomorphic models in mnemonics, GABRIELE, Mino (ed.): *L'Arte della Memoria per Figure, con il Fac-Simile dell'Arte Memorandi Notabilis per Figureas Evangelistarum* (1470). Trento, La Finestra, 2006, pp. 38–61.

38. For the tension between natural and heraldic body as mediated by images, BELTING, Hans: *Bild-Anthropologie: Entwürfe für eine Bildwissenschaft*. Munich, Fink, 2001, pp. 115–142.

39. On ‘tectonic’ concepts of the body and the intellectual operations of ‘cutting’ and ‘connecting’, KARVOUNI, Maria: «Demas: The Human Body as a Tectonic Construct», in PÉREZ-GÓMEZ, Alberto and PARCELL, Stephen (eds.): *Chora Three: Intervals in the Philosophy of Architecture*. Montreal and Kingston, McGill-Queen’s University Press, 1999, pp. 103–124.

40. For a survey of historical, theoretical, and experimental explorations of ‘implicit’ memory, SCHACTER, Daniel L.: «Implicit Memory: History and Current Status», *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 13 (1987), pp. 501–518. On the interplay of ‘implicit’ and ‘explicit’ memory, FUCHS, Thomas: «Das Gedächtnis des Leibes», *Phänomenologische Forschungen*, 5 (2000), pp. 71–89. For the embodiment of images, KROIS, John Michael: «Bildkörper und Körperschema», in BREDEKAMP, Horst and LAUSCHKE, Marion (eds.): *Bildkörper und Körperschema: Aufsätze zur Verkörperungstheorie ikonischer Formen*. Berlin, Akademie-Verlag, 2011, pp. 252–271.



FIGURE 6. PRIMA MARCI IMAGO, WOODCUT, IN: GEORG SIMLER (ED.): *ARS MEMORANDI MEMORABILES EVANGELISTARUM FIGURAЕ*. PFORZHEIM: THOMAS ANSHELM, 1505, N.P.

unbelievable, or laughable,» generally as «compelling as possible.»⁴¹ Publicius further stressed the benefits of utilizing living beings, which may be animated through «ridiculous movement, remarkable gesture, savage and cruel expression.»⁴² Once implanted in the mind, these *imagines agentes* exercise such power that even their removal requires practice, as evident in the *ars oblivionalis*.⁴³ Composite creatures, centaurs, and chimeras, in particular, capture the mind of whoever pictures them because they are «unconstrained by naturalistic conventions.»⁴⁴

In a blockbook edited by the South German teacher Georg Simler (ca. 1477–1536) in 1502 such monsters aid the memorization of biblical events.⁴⁵ The volume comprises woodcut illustrations for each chapter of the four gospels, together with explanatory texts keyed by numbers in the illustrations. The figures are a composite of the symbol of the respective evangelist and items or scenic details that index the content of their gospel. The picture for the first chapter of Mark (Figure 6), for instance, shows a menacingly sprawling lion with protruding claws, glaring eyes, and clenched teeth. The font on top of his head (1) signifies the baptism of Jesus

(Mk 1:9–11), the pillow on his breast (2) the healing of a paralytic at Capernaum (Mk 2:1–2:12), and the demon with broken back hanging by the belly (3) the performance of exorcisms (Mk 5:1–20). In this case, it is not the secondary images, but the anthropomorphic lion that exudes visual force. The Latin distich heading the illustration somewhat paradoxically ‘voices’ the affective agency invested in these pictures: «The dreadful Lion roars through the deserts of beasts, while Mark instructs how to enter rightful paths.»⁴⁶ Though terrible to behold, these phantasms are seen to benefit learning by ‘arousing’ the mind, focusing attention, and consolidating memory. They

41. [CICERO]: *op. cit.*, lib. III, cap. 22, pp. 218–221.

42. PUBLICIUS, Jacobus: *op. cit.*, p. 239.

43. For the disposal of memory, Publicius advises visualizing a tempest that empties all mnemonic sites: *Idem*, p. 251. On the ‘art of forgetting’, BOLZONI, Lina: *op. cit.*, pp. 143–148.

44. PUBLICIUS, Jacobus: *op. cit.*, p. 243. Similarly, *Idem*, p. 238. Generally, on the emotional charge of memories, embodiment, and the *affectio animi*, BOLZONI, Lina: *op. cit.*, pp. 165–179; CARRUTHERS, Mary: *op. cit.*, pp. 75–76; pp. 85–86; pp. 185–186; GABRIELE, Mino: *op. cit.*, pp. 7–16; YATES, Frances: *op. cit.*, pp. 9–10; pp. 16–17; pp. 66–67. For a theoretical mapping of *imagines agentes*, BREDEKAMP, Horst. *Image Acts* ... p. 7.

45. For a modern transcription, [anon.]: «A Method for Recollecting the Gospels», trans. HALPORN, James W., in CARRUTHERS, Mary and ZIOLKOWSKI, Jan M. (eds.): *The Medieval Craft of Memory: An Anthology of Texts and Pictures*. Philadelphia, University of Pennsylvania Press, 2002, pp. 255–293. For a guide to the illustrations, GABRIELE, Mino: *op. cit.*, pp. 110–111. For the broader context, MASSING, Jean Michel: «From Manuscript to Engravings: Late Medieval Mnemonic Bibles», in BERNS, Jörg Jochen and NEUBER, Wolfgang (eds.): *Ars Memorativa: Zur Kulturgeschichtlichen Bedeutung der Gedächtniskunst, 1400–1750*. Tübingen, Niemeyer, 1993, pp. 101–115, here: pp. 104–105.

46. Trans. FJ / SIMLER, Georg (ed.): *Ars Memorandi Memorabiles Evangelistarum Figurae*. Pforzheim, Thomas Anshelm, 1505, n.p.: «Intonat horribilis Leo per deserta ferar[um] / Marcus: dum rectas mo[n]strat inire vias.» For the mnemonic charge of animals in medieval visual culture, CARRUTHERS, Mary: *op. cit.*, pp. 157–162.



FIGURE 7A, 7B. FILIPPO NEGROLI: ARMOR OF GUIDOBALDO II DELLA ROVERE / SO-CALLED 'GUARNITURA DELLA FAMA', BURGONET, STEEL, GOLD, AND TEXTILE, MILAN, CA. 1532–1535, SAINT PETERSBURG, STATE HERMITAGE MUSEUM, INV. N°. 3.O. 6159.

also provoke religious fervor and deliberation (*cogitatio*), which ultimately foster a moral disposition (*intentio*).⁴⁷

Such mnemotechnical creatures find a close analogy in so-called 'grotesque' armor of the Renaissance. Unlike the gothic-type suit sported by Federico da Montefeltro, these elaborately worked ensembles were largely unfit for military enterprise or combat. Instead, they were donned at ceremonial occasions, depicted in portraits, and shown off in chambers of curiosities. Covered by fantastic animals and distorted physiognomies, they seem to undermine mimetic readings, while intensifying iconic qualities. These 'anti-classical' features are commonly attributed to vernacular taste, epic poetry, and more broadly courtly tournament culture.⁴⁸ Beyond their chivalric connotations, however, they may have served as mnemonic imagery, gesturing to the collection spaces they inhabited. With their attention on surface decoration, these monstrous creations herald a recasting of armor that shifted emphasis away from embodied practices to visual representation, from prosthetic enhancement to aesthetic effects, as well as from ethical disposition to political aims.

The «Garniture of Fame» (Figure 7), manufactured around 1532/1535 in the Milanese workshop of Filippo Negrioli (ca. 1510–1579), stands out as one of the most captivating creations of this genre. In contrast to the abstract make-up of late medieval composite armor, this ensemble is designed as a sculptural whole, with each of its components embossed into expressive shapes, further detailed by surface chiseling. The high-relief burgonet (Figure 7a–b) combines various animal and fantastic anatomies: a protruding

47. For the ethical dimension of memory, *idem*, pp. 81–89.

48. For a comprehensive overview of grotesque armor, LA ROCCA, Donald J.: «Monsters, Heroes, and Fools: A Survey of Embossed Armor in Germany and Austria, ca. 1475 – ca. 1575», in GROENENDIJK, Gert (ed.): *A Farewell to Arms: Studies on the History of Arms and Armour*. Delft, Legermuseum, 2004, pp. 34–55; SPRINGER, Carolyn: *Armour and Masculinity in the Italian Renaissance*. Toronto, University of Toronto Press, 2010, pp. 54–70.



FIGURE 7C. FILIPPO NEGROLI: ARMOR OF GUIDOBALDO II DELLA ROVERE / SO-CALLED 'GUARNITURA DELLA FAMA', BREASTPLATE, STEEL AND GOLD, MILAN, CA. 1532–1535, FLORENCE, MUSEO NAZIONALE DEL BARGELLO, INV. N°. M. 772.



FIGURE 7D. FILIPPO NEGROLI: ARMOR OF GUIDOBALDO II DELLA ROVERE / SO-CALLED 'GUARNITURA DELLA FAMA', PAULDRON FOR THE RIGHT SHOULDER, STEEL AND GOLD, MILAN, CA. 1532–1535, NEW YORK, METROPOLITAN MUSEUM OF ART, ACC. N°. 14.25.7141.

the original complete set would have camouflaged the entire body of the wearer, apparently without offering any clues for identification.⁴⁹

On the basis of circumstantial evidence, it is believed that the garniture was commissioned by Guidobaldo II della Rovere (1514–1574), duke of Urbino, whose military misfortunes seem to be at odds with a heroic notion of authority. Though evoking the example of the *condottiere* branded by Federico da Montefeltro some decades earlier, the suit in fact signals a new approach to political practice enacted through cultural distinction and theatrical performance rather than physical fitness. Guidobaldo inherited a considerable collection of militaria assembled by his father Francesco Maria I della Rovere (1490–1538), which he looked to refine through his own patronage of the arts. His ambitious self-fashioning thus seems to have served as a counterbalance to the rapid decline of his dynasty.⁵⁰ In this light, Negroni would have designed the «Garniture of Fame» as an aesthetic apparatus that enhances the wearer's symbolic prestige rather than celebrating his military

snout with sharp teeth, frowning eyes under undulating brows, pig-like ears, curled ram's horns, bat wings with glaring eyes, and a scaled reptile that crouches grinningly on the comb. The cuirass (Figure 7c) is girded by two bat wings that are dotted with riveting eyes and converge at the sternum. Above, a cartouche suspended from a collar of interwoven branches is engraved with a close-up river landscape and a cryptic inscription referencing the mythic underworld river of forgetfulness: «In this itself, I will drink no oblivion from the river of Lethe.»⁴⁹ The pauldrons (Figure 7d) resemble monstrous dolphins with gaping mouths, laid-back ears, puckered brows, and fiendishly staring eyes. Later inventory sources and depictions indicate that

49. Trans. FJ: «NVLLA BIBAM LAETHES OBLIVIA FLVMINE IN IPSO.»

50. For a detailed description, PYHRR, Stuart W. and GODOY, José-A: *op. cit.*, cat. no. 23, pp. 136–146; SCALINI, Mario: *Armature all'Eroica dei Negroni*. Florence, Museo Nazionale del Bargello, 1987, pp. 10–12; pp. 19–22; SPRINGER, Carolyn: *op. cit.*, pp. 90–103.

51. For the cultural politics of Guidobaldo II della Rovere, BECKER, Sebastian: *Dynastische Politik und Legitimationsstrategien der della Rovere: Potenziale und Grenzen der Herzöge von Urbino (1508–1631)*. Berlin and Boston, De Gruyter, 2015, pp. 74–75; pp. 275–295; pp. 317–327; PIPERNO, Franco: *L'Immagine del Duca: Musica e Spettacolo alla Corte di Guidobaldo II Duca d'Urbino*. Florence, Olschki, 2001. For Francesco Maria's collection of military artifacts, *idem*, pp. 23–24. For the renovation and enlargement of the Palazzo Ducale in Urbino, SIKORSKY, Darius J.: «Il Palazzo Ducale di Urbino sotto Guidobaldo II (1538–74): Bartolomeo Genga, Filippo Terzi e Federico Brandani», in POLICHETTI, Maria Luisa (ed.): *Il Palazzo di Federico da Montefeltro: Restauri e Ricerche*. Urbino, QuattroVenti, 1985, pp. 67–90, here: pp. 84–87.

prowess. Just like the mnemonic monsters of the blockbook, the suit dominates its environment and commands attention. With the inscription on the collar denouncing forgetfulness, the armor is cast as an ‘active’ image that plants impressions into the mind of the beholder. Donned in public venues, however, the armor’s disconcerting features would have imprinted the ruler into the emotional memory of his subjects and ‘primed’ their political attitudes.⁵² Instead of sensitizing the viewer for moral instruction, as medieval mnemonic handbooks suggested, grotesque armor crafted embodied susceptibilities keyed to the body of the prince, who thus rules his realm just as he manages his collection.

MIDDLE NATURES

In art historical scholarship, the unusual design of the garniture is commonly thought to reference monstrous creatures or objects from Ludovico Ariosto’s (1474–1533) romance epic *Orlando Furioso* (1516). The suit is considered to evoke the magical armor of the Indian warrior princess Marfisa or the indestructible dragon-skin of the Saracen king Rodomonte, though Ariosto portrays both as enemies of the Christian armies.⁵³ In other interpretations, the ensemble personifies the allegory of fame, such as imagined by the Ferrarese diplomat Vincenzo Cartari (ca. 1502–1569) in his mythographic compendium *Imagini dei Dei degli Antichi* (1556).⁵⁴ However, some of the more ambiguous features of the ensemble seem to undercut a panegyric agenda as much as any definite iconographic reading. Contrary to these ‘heroic’ accounts, historical inventory descriptions of the suit instead frame its grotesque imagery in distinctly naturalistic terms. The oldest surviving record, drawn up with the relocation of the Urbino collections to Florence in 1630, sees the breastplate as «made of scales and fish eyes, with a helmet in the manner of an eagle with a serpent on top.»⁵⁵ In later sources, the cuirass is pictured as bat wings, the pauldrons as lion’s heads, and the burgonet as a «hermaphrodite,» which seems

52. For the enhancement of focal memory and the neglect of contextual information through emotional arousal, KENSINGER, Elizabeth A.: «Remembering the Details: Effects of Emotion», *Emotion Review*, 1 (2009), pp. 99–113. On affect priming, FORGAS, Joseph P.: «Mood and Judgment: The Affect Infusion Model (AIM)», *Psychological Bulletin*, 117 (1995), pp. 39–66. For cross-modal priming, VALLET, Guillaume, BRUNEL, Lionel and VERSACE, Rémy: «The Perceptual Nature of the Cross-Modal Priming Effect: Arguments in Favor of a Sensory-Based Conception of Memory», *Experimental Psychology*, 57 (2010), pp. 376–382.

53. ARIOSTO, Ludovico: *Orlando Furioso*. Ed. ZINGARELLI, Nicola. 7th edition. Milan, Hoepli, 1987, canto 19, 84, p. 199; canto 14, 118, p. 133. For interpretations based on Ariosto, BOCCIA, Lionello Giorgio: «Curiosa di Armamentaria Ariostea», in BENTINI, Jadranka (ed.): *Signore Cortese e Umanissimo: Viaggio intorno a Ludovico Ariosto*. Exhibition Catalogue. Venice, Marsilio, 1994, pp. 48–59, here: p. 59; SCALINI, Mario: «Il Poema Epico Cinquecentesco, Armi all’Eroica e da Pompa», in: *Armi e Armati: Arte e Cultura delle Armi nella Toscana e nell’Italia del Tardo Rinascimento dal Museo Bardini e dalla Collezione Corsi*. Exhibition Catalogue. Florence, Centro Di, 1988, pp. 13–27, here: p. 14; SPRINGER, Carolyn: *op. cit.*, pp. 95–99.

54. CARTARI, Vincenzo: *Le Immagini de i Dei de gli Antichi*. Ed. Auzzas, Ginetta. Vicenza, Pozza, 1996, p. 351. For this reading, SCALINI, Mario. *Armature all’Eroica ...* p. 19; p. 38; SPRINGER, Carolyn: *op. cit.*, pp. 99–100.

55. Quoted in PYHRR, Stuart W. and GODOY, José-A.: *op. cit.*, cat. no. 23, pp. 141 / 145, note 2: «Una Armatura [...] fatta à scaglie, e occhio di pescie con l’elmo à foggia d’Aquila con un serpa in cima, con i suoi gambali senza schiena ma con la Croce, con scarpe scimitarra, e mazza, la quale fù da Carlo quinto addi mandata per farne fare una simile, con la spada» (ASF, Urbino, Classe III, Filza XV, fols. 269r–v).

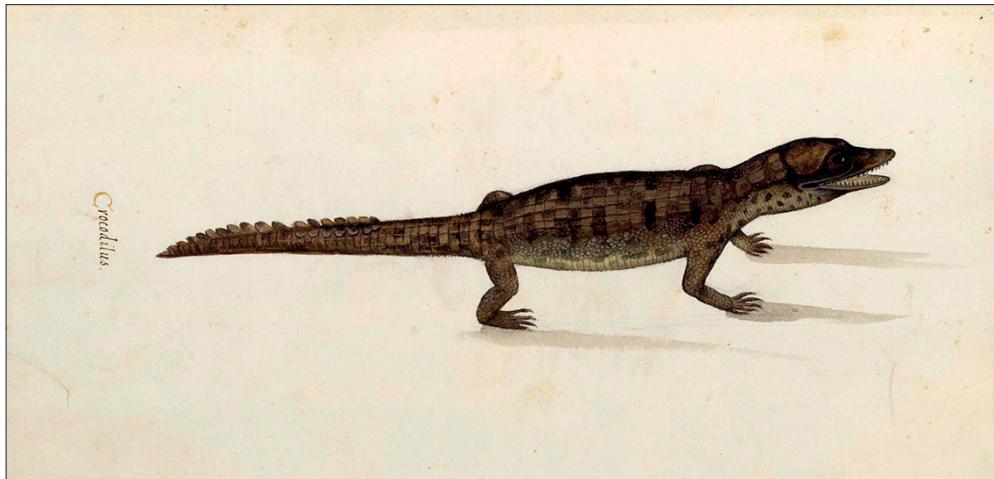


FIGURE 8. *CROCODILUS*, WATERCOLOR DRAWING FROM THE COLLECTIONS OF ULLISSE ALDROVANDI, 1550–1600, BOLOGNA, BIBLIOTECA UNIVERSITARIA, MS. 124, VOL. V, C. 39.

to express its in-between nature.⁵⁶ The crouching figure on the comb is usually characterized as alligator, until subsumed under the fantastical, capricious, and surreal in modern times.

The classification of armor through the language of naturalism is by no means coincidental. The almost fully sculpted anatomies covering the surface, engraved with nearly microscopic detail, forgo the functionality of the object. These images would have begged for categorization when surveyed by a learned beholder, all the more in the context of princely collection practices. In the sixteenth century, previously hidden treasures and armories were reconceptualized as chambers of curiosities that displayed the ruler's command over the order of things. Objects of armor served to incorporate the personal agency of the owner within the impersonal microcosm of his collectibles, with which they were often juxtaposed in symmetrical architectural settings.⁵⁷ In some cases, well-known armor-makers, such as the Milanese masters Giovan Antonio Polacini (ca. 1527–1595/1602) and Giovan Battista Panzeri (ca. 1517–1587), produced cabinets for such spaces, which recreated the material composition of armor, encasing the prince's possessions as if they were part of his body.⁵⁸ Armor would have been showcased among items of art, technology, and nature, fossils, taxidermies, casts from nature, and scientific drawings, assembled to foster analogies across different spheres of knowledge.

56. PYHRR, Stuart W. and GODOY, José-A.: *op. cit.*, cat. no. 23, pp. 141–143; esp. p. 145, note 4: «Un Armatura nera [...] lavorata à alie di pipistrello, a occhi, e à scagle tocco con oro in parte senza schiena, con elmo a figura del mofroditto, con orecchioni a foggia di alie di pipistrello» (ASF, Guardaroba Medicea 539, n.p.).

57. For the 'musealization' of armor and its place in contemporary collection spaces, GHERMANI, Naima: *Le Prince et son Portrait: Incarner le Pouvoir dans l'Allemagne du XVI^e Siècle*. Rennes, PUR, 2009, pp. 252–256. For a classification of display strategies, SHALEM, Avinoam: *Objects in Captivity: Preliminary Remarks on the Exhibiting and Making of Images of the Art of War* (forthcoming).

58. For an overview, LEYDI, Silvio: «Mobili Milanesi in Acciaio e Metalli Preziosi nell'Età del Manierismo», in GUERRINI, Alessandra (ed.): *Fatto in Italia: Dal Medioevo al Made in Italy*. Exhibition Catalogue. Cinisello Balsamo, Silvana, 2016, pp. 121–137.



FIGURE 9. MUSEO DI FERRANTE IMPERATO, WOODCUT, IN: FERRANTE IMPERATO: *DELL'HISTORIA NATURALE*. NAPLES. COSTANTINO VITALE, 1599, N.P.

Grotesque imagery, in particular, would have provoked a playful revealing of forms and meanings. Yet beyond such symbolic license, these suits may have 'governed' the collections they inhabited by providing mnemonic cues that designated epistemic content to bodily coordinates. The metamorphotic decoration of the «Garniture of Fame» in this way opened up multiple avenues for association, while retaining the emotional force of the non-mimetic.

The reptile sprawling over the comb of the burgonet, for example, resembles early depictions of crocodiles, such as a watercolor painting commissioned by the famous Bolognese naturalist Ulisse Aldrovandi (1522–1605) sometime after 1550 (Figure 8). Aldrovandi's vast store of botanical and zoological specimens, dried and pressed, or documented in vivid drawings, was among the first natural history collections to systematically classify animal and plant life. The perspectival top view of the watercolor gives the impression that the brown-green crocodile with its opened snout and erect tail stands upright on the page of the manuscript.⁵⁹ Filippo Negroni's armor-beast shares the general dimensions of Aldrovandi's crocodile as well as the horny scutes with its mid-dorsal keels, but also features plant-like

59. For Aldrovandi and his visual strategies, BREDEKAMP, Horst: *Antikensehnsucht und Maschinenglauben: Die Geschichte der Kunstkammer und die Zukunft der Kunstgeschichte*. Berlin, Wagenbach, 2000, pp. 19–21; FISCHEL, Angela: *Natur im Bild: Zeichnung und Naturerkenntnis bei Conrad Gessner und Ulisse Aldrovandi*. Berlin, Gebrüder Mann, 2009, pp. 74–160. For his museum and its organization, FINDLEN, Paula: *Possessing Nature: Museums, Collecting, and Scientific Culture in Early Modern Italy*. Berkeley, University of California Press, 1996, pp. 17–31; pp. 122–124.

excrescences on its back and a pointier snout recalling Mannerist renderings of dolphins. Nevertheless, the resemblance to a crocodile was credible enough to inspire custodians and visitors to identify the armor as such. Stuffed crocodiles were a popular prop of chambers of curiosities, adopted from the older tradition of suspending 'dragons' in churches, such as in the Sanctuary of Santa Maria delle Grazie in Mantua, which used to house a vast array of votive armor. Transplanted into chambers of curiosities, they were often exhibited in prominent places and came to emblemize such collections in illustrations and frontispieces of scholarly publications.⁶⁰ In the first picture of a natural history cabinet (Figure 9), engraved for the treatise *Dell'Historia Naturale* (1599) by Ferrante Imperato (ca. 1525–1615), a bystander points to a massive crocodile that occupies the center of the ceiling. Other maritime specimens, fish, shells, and amphibians fill the remaining vault, while the walls are lined with cabinets containing precious stones, ores, and fossils, topped by taxidermy birds. Similar to this set-up, the «Garniture of Fame» assembles animal and vegetal features, crowned by a crocodile on the crest of the helmet. The creature thus signals a vertical order consonant with the spatial arrangement of chambers of curiosities but predicated upon the body. In other words, the suit turns the collection inside out, with its interior carved out for the body of the prince and its objects attached to him as prosthetic extensions. Presented to the beholder in these terms, the order of things becomes another aspect of the ruler's physiognomy.

On a different note, the garniture's composite anatomies would have evoked notions of monstrosity and taxonomic hybridity, which concerned naturalists who explored phenomena that eluded categorization. Such exceptional specimens, marvels, and mythic creatures, which had been associated with demonic agency in the past, were now reframed as the ludic excesses of a boundlessly generative nature. The most prestigious chambers of curiosities preserved the alleged remains of dragons, basilisks, and unicorns, which inspired awe in visitors and spotlighted the owner's social standing.⁶¹ Filippo Negroli's enigmatic ensemble may have appealed to such appetites for the rare by outdoing nature's creativity with artistic means. Even beyond arousing wonder, however, the garniture seems to key into contemporary natural historical discourses that struggled with the ambiguities of taxonomic standardization. Former 'marvels' now documented mixed categories that transgressed the confines of inanimate and animate matter, minerals, stones, plants and animals, classes and species. The foliage sprouting from the bat wings around the waist and from the reptile on the helmet typified so-called 'zoophytes', animal and vegetal amalgamations examined by the English physician Edward Wotton (1492–1555) in his *De Differentiis Animalium Libri Decem* (1552). Wotton

60. For the collection history of crocodiles, LAUBE, Stefan: *Von der Relique zum Ding: Heiliger Ort – Wunderkammer – Museum*. Berlin, Akademie-Verlag, 2011, pp. 82–86; DASTON, Lorraine and PARK, Katharine: *Wonders and the Order of Nature, 1150–1750*. New York, Zone Books, 1998, pp. 84–86; pp. 144–145.

61. For the naturalization of monsters and the epistemic dimension of chambers of curiosities, DASTON, Lorraine and PARK, Katharine: *op. cit.*, pp. 135–214; FISCHEL, Angela: *op. cit.*, pp. 118–140. On fantastical taxidermies, *idem*, pp. 58–61; FREEDBERG, David: *The Eye of the Lynx: Galileo, his Friends and the Beginnings of Modern Natural History*. Chicago, University of Chicago Press, 2002, pp. 361–365. For the natural philosophical connotations of grotesque imagery, CAMPBELL, Stephen: *op. cit.*, pp. 160–168.



FIGURE 10. WENZEL JAMNITZER: TWO LIZARDS CAST FROM NATURE, SILVER, 1540–1550, NUREMBERG, GERMANISCHES NATIONALMUSEUM, INV. N°. HG 11135; HG 11136.

defined them as «undecided» natures that are «somewhat excluded from all those divided in species,»⁶² with minimal sentience and movability. The category comprised mostly invertebrates, sponges, sea anemones, and corals, but also the mythic «lamb-plant» of Tartary.⁶³ Learned attention to such amalgamation provides a biological rationale of animal-plant hybrids like those prominent on the «Garniture of Fame.»

Within the animal kingdom, both the bat and the reptile resisted taxonomic fixity, the first for flying as a mammal, the latter for laying eggs despite having four legs. In the terms of the Roman naturalist Federico Cesi (1585–1630), such creatures would have registered as «middle natures» that conjoin the characteristics of multiple species.⁶⁴ In fact, the cryptic description of the burgonet as hermaphroditic in a later inventory may result from the unusual reproductive anatomy of reptiles, which in the sixteenth century were believed to procreate asexually through spontaneous generation.⁶⁵ For this reason, they seem to have been particularly suggestive of an emphatic notion of artistic creativity that claimed to infuse life into inanimate matter. To emulate these generative powers,

62. WOTTON, Edward: *De Differentiis Animalium Libri Decem*. Paris, Michel de Vascosan, 1552, lib. X, cap. 248, p. 217: «Sunt animalia quaeda[m] exclusa omnino iis quae in genera divisimus: quae scilicet alicipi natura sunt: neque enim in iis perfectu[m] animal est, neq[ue] planta.»

63. For the etymology of the term, LEUCKART: «Die Zoophyten: Ein Beitrag zur Geschichte der Zoologie», *Archiv für Naturgeschichte*, 41 (1875), pp. 70–110; TOEPFER, Georg: «Pflanze», in: *Historisches Wörterbuch der Biologie: Geschichte und Theorie der Biologischen Grundbegriffe*. Stuttgart and Weimar, J. B. Metzler, 2011, vol. 3, pp. 11–33, here: pp. 25–27.

64. For the terminology of «middle natures», FREEDBERG, David: *op. cit.*, pp. 182–183; pp. 322–325; pp. 375–376.

65. On the biological semantics of the hermaphrodite, TOEPFER, Georg: «Geschlecht». *op. cit.*, vol. 2, pp. 72–90, here: pp. 83–84.

lizards and snakes were popular creatures to be cast from nature. Such objects of enhanced artificial life were copiously produced since the early Renaissance and featured prominently in *studiolis* and chambers of curiosities.⁶⁶ Here, they may have invited comparison with objects of armor, which were also 'taken from life' and crafted from similar materials, with similar techniques. One such lizard (Figure 10), manufactured by the Nuremberg goldsmith Wenzel Jamnitzer (ca. 1507–1585) for the Munich *Kunstkammer*, vaguely resembles Negroli's helmet-creature and exudes the same sense of aggression, though differing in posture and morphological details.⁶⁷ In this context, some of the epic references traditionally associated with the «Garniture of Fame,» such as the 'dragon-skin' of the Saracen king, seem to appeal to collection practices and naturalist discourses rather than chivalric virtues. The wearer does not so much reenact the *exemplum* of a mythic hero but embodies a *monstrum* that eludes categories and displaces him from the natural world. The suit subtly provides only as much biological characteristics as necessary to trigger classification, while avoiding any definite identification and the purely fantastical. Enclosed in his knowledgeable attire, the prince appears ambiguously removed from the order of representation his body fleshes out. His authority guarantees the system of identities and differences but is not itself bound by it. Held to command absolute knowledge, he reclaims mystery.

THE POLITICS OF WONDER

The dissimulation of the prince through armor signals a shift in the political choreography of knowledge away from the fashioning of erudition towards the management of order. Federico da Montefeltro wore his suit as a cognitive prosthesis that toolled the orthopedic effects of such objects for the enhancement of mnemonic performance. His crafting of memory reckoned with the same physiological forces also underpinning his authority as *condottiere*, which rested upon personal trial and military achievement. The reflective surface of his gothic armor mirrored the objects of the *studiolis* and the gaze of the beholder, which all shared in the cosmos of resemblances.⁶⁸ Federico incorporated rather than

66. For the anatomical, medical, and talismanic conception of lizards and the artistic recreation of spontaneous generation, FELFE, Robert: *Naturform und Bildnerische Prozesse: Elemente einer Wissenschaftsgeschichte in der Kunst des 16. und 17. Jahrhunderts*. Berlin and Boston, De Gruyter, 2015, pp. 55–70. For the early Italian production and the art theoretical background, GRAMACCINI, Norberto: «Das genaue Abbild der Natur: Riccios Tiere und die Theorie des Naturabgusses seit Cennino Cennini», in BECK, Herbert and BOL, Peter C. (eds.): *Natur und Antike in der Renaissance*. Exhibition Catalogue. Frankfurt a. M., Liebighaus, 1985, pp. 198–225; KLIER, Andrea: *Fixierte Natur: Naturabguss und Effigies im 16. Jahrhundert*. Berlin, Reimer, 2004, pp. 53–66. In his museological treatise *Inscriptiones vel Tituli Theatri Amplissimi* (1565), Samuel Quiccheberg (1529–1567) defines casts from nature as a category in its own right that relays the spheres of *artificialia* and *naturalia*: BREDEKAMP, Horst. *Antikensehnsucht...* p. 49.

67. Comprehensively, on Wenzel Jamnitzer, FELFE, Robert: *op. cit.*, pp. 24–40; KRIS, Ernst: «Der Stil 'rustique': Die Verwendung des Naturabgusses bei Wenzel Jamnitzer und Bernard Palissy», in: *Erstarre Lebendigkeit: Zwei Untersuchungen*. Zürich, diaphanes, 2012, pp. 27–135, here: pp. 39–92. For his reconciliation of ornament, nature, and the grotesque, KLIER, Andrea: *op. cit.*, pp. 66–90.

68. For armor as 'mirror body' and embodiment of the community, BODART, Diane: «Le Prince Miroir: Méta-phaores Optiques du Corps Politique», in MOREL, Philippe (ed.): *Le Miroir et l'Espace du Prince dans l'Art Italien de la*

conceptualized his collection. He ruled by demanding imitation, not by eliciting deliberation. By contrast, Guidobaldo II della Rovere used his «Garniture of Fame» as an aesthetic apparatus that mobilized monstrous imagery for political ends. The blackened surface did not frame the physique of the wearer, but instead diffused his presence and unsettled the eye. The suit diverted attention from his eroding personal power by disguising individual features and appealing to the order of nature, shielded by the lure of wonder. Covered by composite animal and plant anatomies, the garniture triggered classification only to uproot the wearer from the plane of representation. Unlike Federico, Guidobaldo did not challenge his subjects to a contest of physical and mental strength, but evoked radical distinction, while claiming truth as a prerogative of the sovereign.

The embedding of armor in Renaissance cultures of knowledge also sheds a different light on sensibilities to princely collections. Such sites of curiosity did not evolve from a diminishment of physicality and political agency as suggested by the divide of ‘contemplative’ and ‘active’ attitudes. The *studiolo* did not delimit a ‘non-place’ withdrawn from its environment, but reconfigured that environment as a prosthetic emanation of the sovereign’s body. The collectibles did not simply claim territory, manifest symbolic capital, or provide samples of natural resources.⁶⁹ Rather, they diffused through the corporeal sphere of the ruler, shaped his awareness, and served as tools of knowledge. The display of armor in these spaces thus points to a genealogy of political practices that drifted from a ‘sacramental’ notion of authority to a ‘technological’ administration of order. Chambers of curiosities were not blank ‘tablets’ for playful constellations of knowledge, giving rise to new understandings of nature and culture.⁷⁰ On the contrary, the ‘hidden’ presence of the ruler, the claustrophobic constriction of space, the horror of monsters, and the stimulation of the senses would have fostered embodied susceptibilities that precede a cognitive apprehension. In other words, the sense of wonder permeating these places undercut contextual resonance, not to propel inquiry, but to politicize perception.⁷¹

Armor exemplifies such disciplinary concerns of display. As automata entered princely collections, visitors would have been presented with the outdoing of human nature by invention.⁷² The first articulated humanoid robot was constructed by Leonardo da Vinci (1452–1519) from a German-Italian suit of armor

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70. BREDEKAMP, Horst. *Antikensehnsucht* ... pp. 63–76; pp. 100–102.

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and probably displayed in an early chamber of curiosities set up by the duke of Milan Ludovico Sforza (1452–1508). The suit was able to move its arms and head. It would have molded the beholder into a mirror image of itself as it dropped its jaws, mimicking the astonishment it aroused.⁷³ Leonardo's artificial knight later found his counterpart in the phantasmatic automata envisioned by René Descartes (1596–1650), who regarded them as embodiments of a mechanical cosmos.⁷⁴ Stripped of its materiality, the 'man-machine' thus signals the latest transformation of armor from physical protection to prosthetic enhancement, aesthetic apparatus into figure of thought.

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Figure 7d: Courtesy Pierre Terjanian, Metropolitan Museum of Art.

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